

Application No. 10/000,236
Amdt. dated December 31, 2003
Reply to Office Action of October 21, 2003
Inventor(s) Name: Alan Smithies
Attorney Docket No.: 15880-10003

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:
 - a polymer substrate capable of retaining a physical structure at the application temperature; and
 - a polyimide stiffening agent consisting of a polyimide adapted for ~~treating the polymer substrate. treating the polymer substrate and applied thereto, wherein the polymer substrate with applied stiffening agent is capable of withstanding at least 100,000 cleaning pulses at the application temperature.~~
2. (Cancelled):
3. (Currently Amended): The filter medium of claim 1 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, glass, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof.

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4. (Previously Presented): The filter medium of claim 1 wherein the substrate comprises polyphenylene sulfide.

5. (Previously Presented): The filter medium of claim 1 wherein the physical structure is a pleated structure.

6. (Currently Amended): The filter medium of claim 1 wherein the polyimide is selected from the group consisting of polyamidimides, polyamideimides, polyetherimides, and polybismaleimides and mixtures thereof.

7. (Currently Amended): The filter medium of claim 1 wherein the polyimide-based stiffening agent consisting of a polyimide is about 2% to about 20% by weight of the total weight of the filter medium.

8. (Currently Amended): The filter medium of claim 1 wherein the application temperature is greater than about 375°F, than about 375°F.

9. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:
a polymer substrate capable of retaining a pleated structure at the application temperature;

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a plurality of pleats formed into the ~~polymer substrate; and~~ polymer substrate at a
temperature that is higher than the application temperature; and
a stiffening agent consisting of a polyimide adapted for treating the polymer substrate.

10. (Currently Amended): The filter medium of claim 9 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, glass, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof.

11. (Previously Presented): The filter medium of claim 9 wherein the polymer substrate comprises polyphenylene sulfide.

12. (Previously Presented): The filter medium of claim 9 wherein the polyimide is selected from the group consisting of polyamideimides, polyetherimides, and polybismaleimides and mixtures thereof.

13. (Currently Amended): The filter medium of claim 9 wherein the ~~polyimide-based~~ stiffening agent consisting of a polyimide is about 2% to about 20% by weight of the total weight of the filter medium.

14. (Currently Amended): The filter medium of claim 9 wherein the application temperature is greater than ~~about 375°F.~~ than about 375°F.

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15. (Currently Amended): A filter medium for use in a filtering application at an application temperature, the filter medium comprising:

a polymer substrate capable of retaining a pleated structure at the application temperature;

a plurality of pleats formed into the ~~polymer substrate; and~~ polymer substrate at a temperature that is higher than the application temperature; and

a stiffening agent consisting of a polyamideimide adapted for treating the polymer substrate.

16. (Previously Presented): The filter medium of claim 15 wherein the polymer substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized; acrylics and mixtures thereof.

17. (Previously Presented): The filter medium of claim 15 wherein the polymer substrate comprises polyphenylene sulfide.

18. (Currently Amended): The filter medium of claim 15 wherein the application temperature is ~~greater than about 375°F.~~ greater than about 375°F.

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19. (Withdrawn): A method of making a filter medium comprising:
providing a substrate;
calendering the substrate;
providing a polyimide stiffening agent;
treating the calendered substrate with the polyimide stiffening agent; and curing the treated substrate.

20. (Withdrawn): The method of claim 19 wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof; and
the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.

21. (Withdrawn): The method of claim 19 further including pleating the treated substrate.

22. (Withdrawn): The method of claim 19 wherein the substrate comprises polyphenylene sulfide.

23. (Withdrawn): A method of making a filter medium comprising:
providing a substrate;
calendering the substrate;

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providing a polyimide stiffening agent;
treating the calendered substrate with the polyimide stiffening agent;
curing the treated substrate; and
pleating the treated substrate.

24. (Withdrawn): The method of claim 23 wherein the substrate is selected from the group consisting of polyarylene sulfides, aramides, polyimides, acrylics, pre-oxidized acrylics and mixtures thereof; and
the polyimide is selected from the group consisting of polyamideimides, polyetherimides and polybismaleimides.